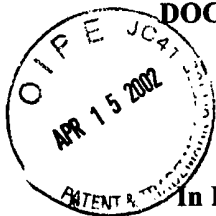


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PATENT

DOCKET NO.: PANT-0301



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Peter E. Nielsen, et al.

Serial No.: 10/083,259

Group Art Unit: Not yet assigned

Filing Date: October 19, 2001

Examiner: Not yet assigned

For: MODIFIED PEPTIDE NUCLEIC ACID (PNA) MOLECULES

DATE OF DEPOSIT: 4 APRIL 2002

I HEREBY CERTIFY THAT THIS PAPER IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL, POSTAGE PREPAID ON THE DATE INDICATED ABOVE AND IS ADDRESSED TO THE ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, DC 20231.

TYPED NAME: Paul K. Legaard
REGISTRATION NO.: 38,534

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 C.F.R. §1.56 and in accordance with 37 C.F.R. §§1.97-1.98, information relating to the above-identified application is hereby disclosed. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 C.F.R. §1.56(b).

- ☒ In accordance with §1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified application, within three months of the date of entry into the national stage of the above identified application as set forth in §1.491, before the mailing date of a first Office Action on the merits of the above-identified application, or before the mailing date of a first office action after the filing of request for continued examination under §1.114, no additional fee is required.

- ☐ In accordance with §1.129(a), this Information Disclosure Statement is being filed in connection with ☐the first or ☐second After Final Submission, therefore:
- ☐ Certification in Accordance with §1.97(e) is attached; or
- ☐ The fee of \$180.00 as set forth in §1.17(p) is attached.
- ☐ In accordance with §1.97(c), this Information Disclosure Statement is being filed after the period set forth in §1.97(b) above but before the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311, or before an action that otherwise closes prosecution in the application, therefore:
- ☐ Certification in Accordance with §1.97(e) is attached; or
- ☐ The fee of \$180.00 as set forth in §1.17(p) is attached.
- ☐ In accordance with §1.97(d), this Information Disclosure Statement is being filed after the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311 but before, or simultaneously with, the payment of the Issue Fee, therefore included are: Certification in Accordance with §1.97(e); and the submission fee of \$180.00 as set forth in §1.17(p).
- ☐ Copies of each of the references listed on the attached Form PTO-1449 are enclosed herewith.
- ☒ Copies of references listed on the attached Form PTO-1449 are enclosed herewith
- EXCEPT THAT:
- ☒ In view of the voluminous nature of references **AP, AW and BM**, and the likelihood that these references are available to the Examiner, copies are not enclosed herewith.

☒ In accordance with §1.98(d), copies of the following references listed on the attached Form PTO-1449 are not enclosed herewith because they were previously cited by or submitted to the U.S. Patent and Trademark Office in patent application(s) for which a claim for priority under 35 U.S.C. §120 have been made in the instant application:

☒ Copies of references **AA-AO, AQ-AV, AX-BL and BN-CT** listed on the attached Form PTO-1449 were previously cited by or submitted to the Patent and Trademark Office in prior application Serial No. **09/689,155**, filed **October 12, 2000**.


☐ If any of the foregoing publications are not available to the Examiner, Applicant will endeavor to supply copies at the Examiner's request.

Please charge any deficiency or credit any overpayment to Deposit Account No. 23-3050.

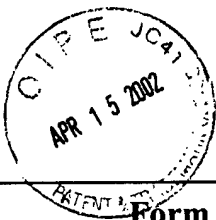
This form is submitted in duplicate.

There are no listed references which are not in the English language.

Date: *4 APRIL 2002*


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Sheet 1 of 7

Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. PANT-0301	Serial No. 10/083,259
		Applicant Peter E. Nielsen, et al.	
		Filing Date October 19, 2001	Group Not yet assigned
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	AA	Arthur, M., et al., "Glycopeptide resistance in enterococci," <i>Trends Microbiol</i> , 1996 , 4(10), 401-407	
	AB	Baquero, F., "Pneumococcal resistance to β -lactam antibiotics: a global geographic overview," <i>Microb Drug Resist.</i> , 1995 , 1(2), 115-120	
	AC	Berge, S.M., et al., "Pharmaceutical salts," <i>J. Pharm. Sciences</i> , 1977 , 66(1), 1-19	
	AD	Bert, F., et al., "Comparative distribution of resistance patterns and serotypes in <i>pseudomonas aeruginosa</i> isolates from intensive care units and other wards," <i>J. Antimicrob Chemother</i> , 1996 , 37, 809	
	AE	Broome-Smith, et al., "The nucleotide sequences of the <i>ponA</i> and <i>ponB</i> genes encoding penicillin-binding proteins 1A and 1B of <i>Escherichia coli</i> K12," <i>FEBS</i> , 1985 , 147, 437-446	
	AF	Carmelli, Y., et al., "The association between antecedent vancomycin treatment and hospital-acquired vancomycin-resistant enterococci," <i>Arch Intern. Med.</i> , 1999 , 159, 2461-2468	
	AG	Chambers, H.F., "Methicillin resistance in staphylococci: Molecular and biochemical basis and clinical implications," <i>Clin. Microbiol. Rev.</i> , 1997 , 10(4), 781-791	
	AH	CDR Weekly, <i>Communicable Disease Report</i> , ISSN 1350-9357, February 19, 1999 , 9(8), 65-75	
	AI	CDR Review, <i>Communicable Disease Report</i> , ISSN 1350-9349, November 10, 1999 , 5(7), R173-R188	
	AJ	Cookson, B.D., "Nosocomial antimicrobial resistance surveillance," <i>J. Hosp. Infec.</i> , 1999 , 43 (Supplement), S97-S103	
	AK	Costerton, J.W., et al., "Bacterial biofilms in nature and disease," <i>Ann Rev. Microbiol.</i> , 1987 , 41, 435-464	
	AL	Davis, J., et al., "Inactivation of antibiotics and the dissemination of resistance genes," <i>Science</i> , 1994 , 264, 375-382	
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		Filing Date October 19, 2001	Group Not yet assigned
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	AM	Demidov, et al., "Stability of peptide nucleic acids in human serum and cellular extracts," <i>P.E. Biochem. Pharmacol.</i> , 1994 , 48(6), 1310-1313	
	AN	Egholm, M., et al., "PNA hybridizes to complementary oligonucleotides obeying the watson-crick hydrogen-bonding rules," <i>Nature</i> , 1993 , 365, 566-568	
	AO	Frimodt-Møller, N., et al., "The mouse peritonitis/sepsis model," <i>Handbook of Animal Models of Infection</i> , Chap. 14, 1999 , 127-136	
*	AP	Genbank, <i>National Centre for Biotechnology Information, USA</i>	
	AQ	Giwerzman, B., et al., "Rapid emergence of resistance in <i>Pseudomonas aeruginosa</i> in cystic fibrosis patients due to in-vivo selection of stable partially derepressed β -lactamase producing strains," <i>J. Antimicrob Chemother</i> , 1990 , 26, 247-259	
	AR	Good, Liam, et al., "Antisense inhibition of gene expression in bacteria by PNA targeted to mRNA," <i>Nature Biotechnology</i> , 1998 , 16, 355-358	
	AS	Good, Liam, et al., "Inhibition of translation and bacterial growth by peptide nucleic acid targeted to ribosomal RNA," <i>Proc. Natl. Acad. Sci USA</i> , 1998 , 95, 2073-2076	
	AT	Gopher, A., et al., "Determination of fructose metabolic pathways in normal and fructose-intolerant children: a ^{13}C NMR study using $[\text{U-}^{13}\text{C}]$ fructose," <i>Proc. Natl. Acad. Sci. USA</i> , 1990 , 87, 5449-5453	
	AU	Hanvey, J.C., et al., "Antisense and antigene properties of peptide nucleic acids," <i>Science</i> , 1992 , 258, 1481-1485	
	AV	Hiramatsu, K., et al., "Dissemination in Japanese hospitals of strains of staphylococcus aureus heterogeneously resistant to vancomycin," <i>Lancet</i> , 1997 , 350, 1670-1673	
*	AW	House of Lords Select Committee on Science and Technology. Resistance to antibiotics and other antimicrobial agents. London, HMSO, 1998	
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* A copy of this reference will not be forwarded to the U.S. Patent and Trademark Office since it is believed to be too voluminous and easily obtainable by the Examiner.



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Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. PANT-0301	Serial No. 10/083,259
		Applicant Peter E. Nielsen, et al.	
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	AX	Hsueh, P., et al., "Persistence of a multidrug-resistant <i>psuedomonas aeruginosa</i> clone in an intensive care burn unit," <i>J. Clin. Microbiol</i> , 1998 , 36(5), 1347-1351	
	AY	Johnson, A.P., "Intermediate vancomycin resistance in <i>staphylococcus aureus</i> : a major threat or a minor inconvenience?," <i>J. Antimicrob Chemother</i> , 1998 , 42, 289-291	
	AZ	Knudsen, H., et al., "Antisense properties of duplex-and triplex-forming PNAs," <i>Nucleic Acids Res.</i> , 1996 , 24(5), 494-500	
	BA	Lepelletier, D., et al., " <i>Escherichia coli</i> : epidemiology and analysis of risk factors for infections caused by resistant strains, <i>Clin. Infect. Dis.</i> , 1999 , 3, 548-552	
	BB	Lewis, J.G., et al., "A serum-resistant cytofectin for cellular delivery of antisense oligodeoxynucleotides and plasmid DNA," <i>Proc. Natl. Acad. Sci. USA</i> , 1996 , 93, 3176-3181	
	BC	Livermore, D., "Multiresistance and 'superbugs'," <i>Commun. Dis. Public Health</i> , 1998 , 1(2), 74-78	
	BD	Livermore, D.M., "Acquired carbapenemases," <i>J. Antimicrob Chemother</i> , 1997 , 39, 673-676	
	BE	Mcneeley, D.F., et al., "An investigation of vancomycin-resistant <i>enterococcus faecium</i> within the pediatric service of a large urban medical center," <i>Pediatr Infect. Dis. J.</i> , 1998 , 17, 184-188	
	BF	Meyer, O., et al., "Cationic liposomes coated with polyethylene glycol as carriers for oligonucleotides," <i>J. Biol. Chem.</i> , 1998 , 273(25), 15621-15627	
	BG	Nielsen, P.E., et al., "Peptide nucleic acid (:PNA), a DNA mimic with a pseudopeptide backbone," <i>Chemical Society Reviews</i> , 1997 , 73-78	
	BH	Nielsen, P.E., et al., "Sequence-selective recognition of DNA by strand displacement with a thymine-substituted polyamide," <i>Science</i> , 1991 , 254, 1497-1500	
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		Applicant Peter E. Nielsen, et al.	
		Filing Date October 19, 2001	Group Not yet assigned
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	BI	Northey, D., et al., "Microbial surveillance in a surgical intensive care unit," <i>Surg. Gynaecol Obstet.</i> , 1974 , 140(3), 321-325	
	BJ	Nyce, J.W., et al., "DNA antisense therapy for asthma in an animal model," <i>Nature</i> , 1997 , 385, 721-725	
	BK	Pooga, M., et al., "Cell penetrating PNA constructs regulate galanin receptor levels and modify pain transmission in vivo," <i>Nature Biotechnology</i> , 1998 , 16, 857-861	
	BL	Porter, E.A., et al., "Non-haemolytic β -amino-acid oligomers," <i>Nature</i> , 2000 , 404, 565	
*	BM	Remington: <i>The Science and practice of Pharmacy</i> , 19 th Ed., 1995	
	BN	Richards, M.J., et al., "Nosocomial infections in medical intensive care units in the United States," <i>Crt Care Med.</i> , 1999 , 27(5), 887-892	
	BO	Vincent, J., et al., "The prevalence of nosocomial infection in intensive care units in Europe," <i>JAMA</i> , 1995 , 274(8), 639-644	
	BP	Zervos, M., "Vancomycin-resistant enterococcus faecium infections in the ICU and quinupristin/dalfopristin," <i>New Horizons</i> , 1996 , 4(3), 385-392	
	BQ	Chandrasekar, P.H., Nosocomial infection among patients in different types of intensive care units at a city hospital, <i>Critical Care Medicine</i> , 1986 , 14(15), 508-510	
	BR	Dowell, S.F., et al., "The best treatment of pneumonia," <i>Arch Intern. Med.</i> , November 22, 1999 , 159, 2511-2512	
	BS	Elliott, T.S.J., et al., "Infections and intravascular devices," <i>British J. Hospital Med.</i> , 1992 , 48(8), 496-503	
	BT	Levy, S.B., "Microbial resistance to antibiotics: An evolving and persistent problem," <i>The Lancet</i> , July 10, 1982 , 83-88	
	BU	Liu, C.C., et al., "Investigation and elimination of epidemic methicillin-resistant staphylococcus aureus in a neonatal intensive care unit," <i>Taiwan, Province of China, Journal Article</i> , July/August 1993 , 1 page, English Abstract	
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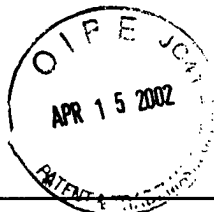
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		Applicant Peter E. Nielsen, et al.	
		Filing Date October 19, 2001	Group Not yet assigned
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	BV	Egholm, M., et al., "Efficient pH-independent sequence-specific DNA binding by pseudoisocytosine-containing bis-PNA," <i>Nucleic Acids Res.</i> , 1995 , 23(2), 217-222	
	BW	Dufourcq, J. et al., "Molecular assembling of DNA with amphipathic peptides", <i>FEBS LETT.</i> , 1998 , Vol. 421, No. 1, pp. 7-11	
	BX	Ishihara, T. et al., "Rules for Strand Invasion by Chemically Modified Oligonucleotides", <i>J. Am. Chem. Soc.</i> , 1999 , Vol. 121, No. 10, pp. 2012-2020	
	BY	Simmons, C. G. et al., "Synthesis and membrane permeability of pna-peptide conjugates", <i>Bioorganic & Medicinal Chemistry Letters</i> , December 2, 1997 , Vol. 7, No. 23, pp. 3001-3006	
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Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office				Docket No. PANT-0301		Serial No. 10/083,259	
				Applicant Peter E. Nielsen, et al.			
				Filing Date October 19, 2001		Group Not yet assigned	
U. S. PATENT DOCUMENTS							
Examiner Initial		Document No.	Date	Name	Class	Subclass	
	BZ	5,652,211	07/29/97	April 4, 2002	514	11	
	CA	5,777,078	07/07/98	Bayley, et al.	530	350	
	CB	5,834,430	11/10/98	Porro, et al.	514	14	
FOREIGN PATENT DOCUMENTS							
Examiner Initial		Document No.	Date	Country	Translation YES NO		
	CC	WO 92/20702	11/26/92	PCT			
	CD	WO 92/20703	11/26/92	PCT			
	CE	WO 96/02558	02/01/96	PCT			
	CF	WO 96/38163	12/05/96	PCT			
	CG	WO 96/11205	04/18/96	PCT			
	CH	WO 98/03533	01/29/98	PCT			
	CI	WO 98/32467	07/30/98	PCT			
	CJ	WO 98/52614	11/26/98	PCT			
	CK	WO 99/05302	02/04/99	PCT			
	CL	WO 99/13893	03/25/99	PCT			
	CM	WO 99/14226	03/25/99	PCT			
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	CO	PA 1999 01735	12/03/99	Denmark			
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U. S. PATENT DOCUMENTS							
Examiner Initial		Document No.	Date	Name	Class	Subclass	
FOREIGN PATENT DOCUMENTS							
Examiner Initial		Document No.	Date	Country	Translation YES NO		
	CP	PA 1999 01467	10/13/99	Denmark			
	CQ	PA 1999 01471	10/13/99	Denmark			
	CR	PA 2000 00522	03/28/00	Denmark			
	CS	PA 2000 00670	04/19/00	Denmark			
	CT	PA 2000 00671	04/19/00	Denmark			
EXAMINER				DATE CONSIDERED			